DD 350/ DD 500

Operating instructions en

Mode d'emploi fr

Manual de instrucciones es

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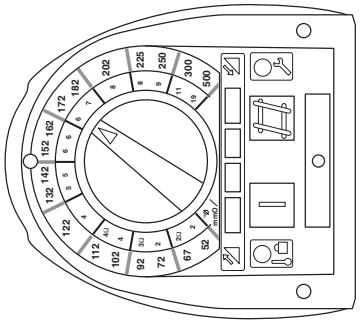

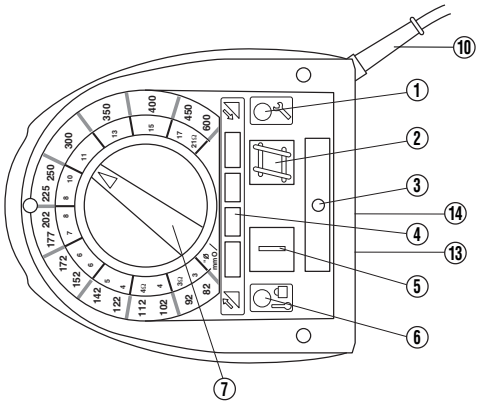

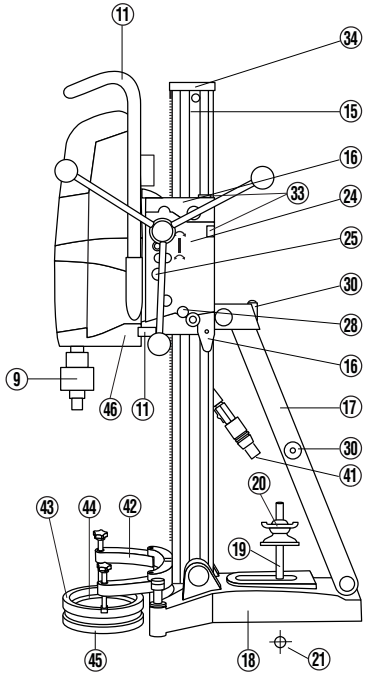

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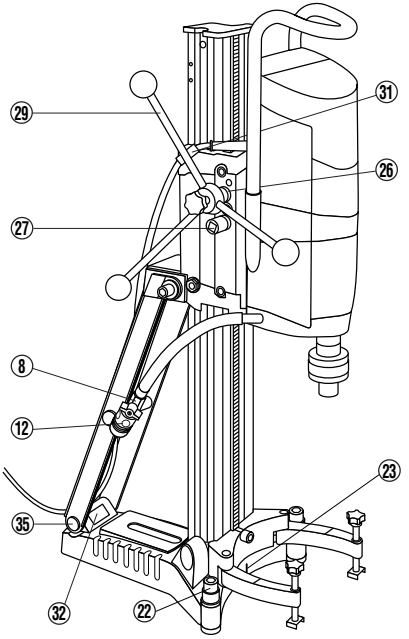

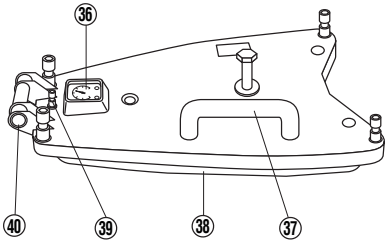

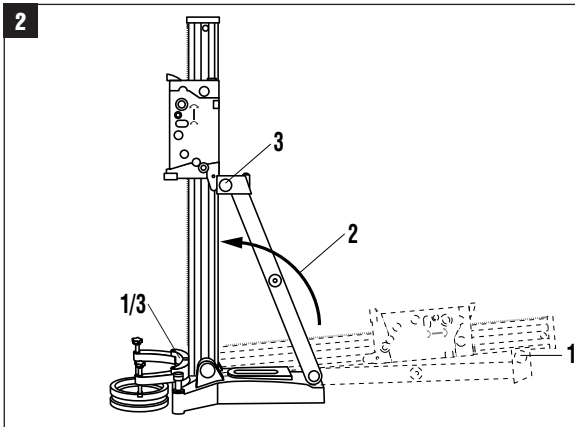
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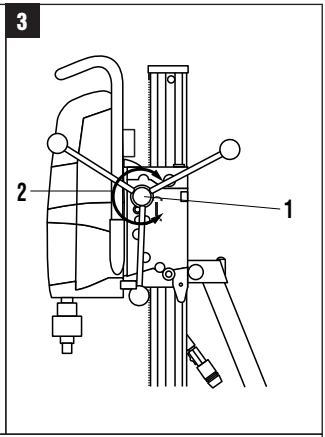
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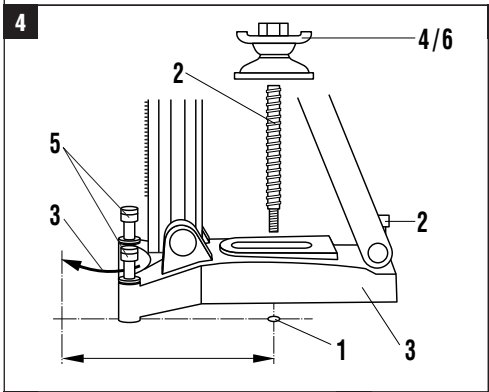
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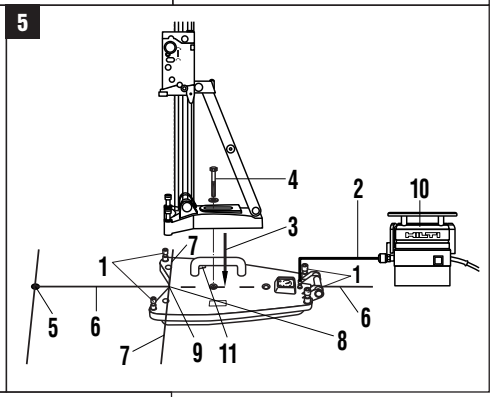
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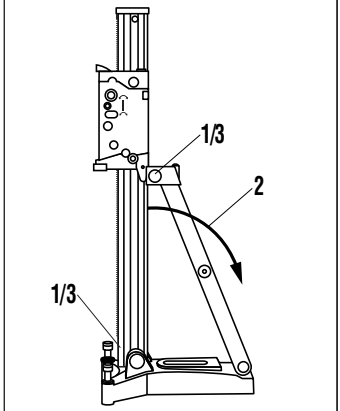
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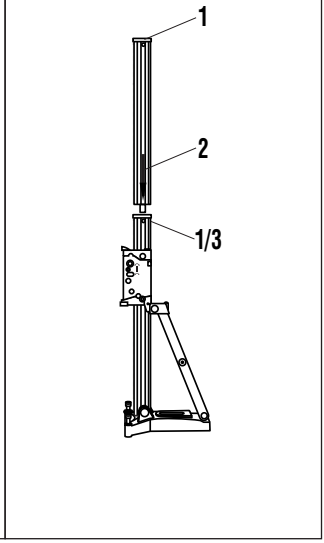
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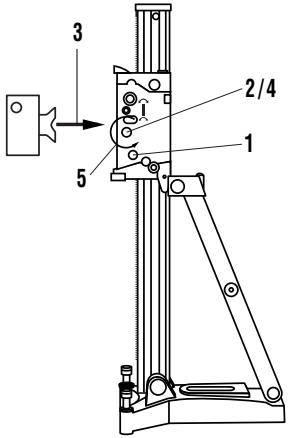

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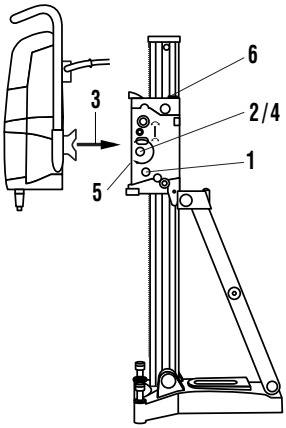

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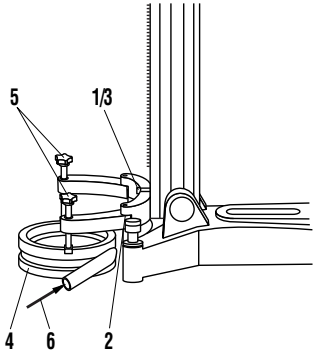

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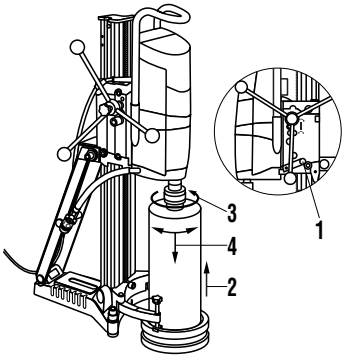

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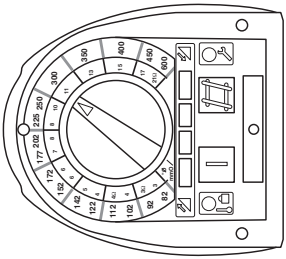

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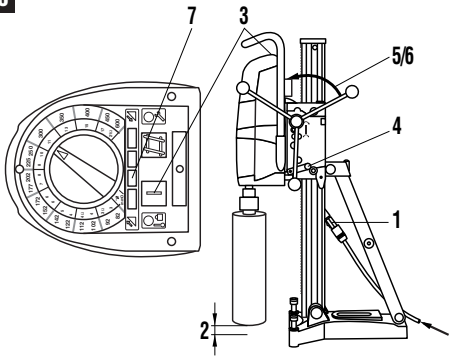

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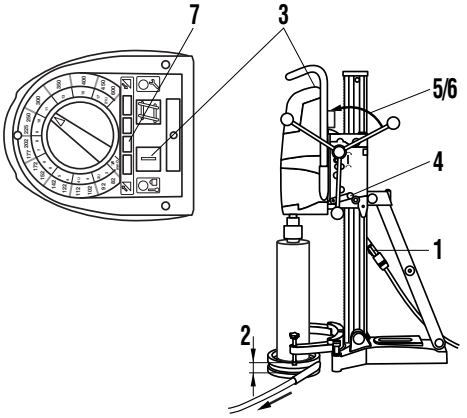

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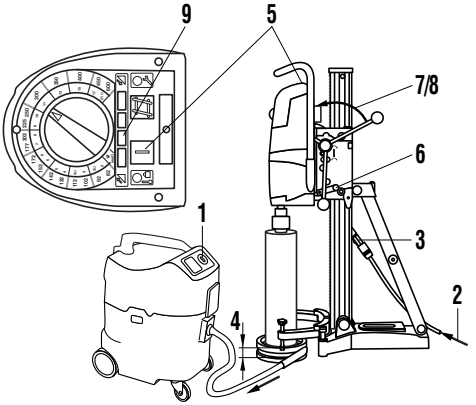

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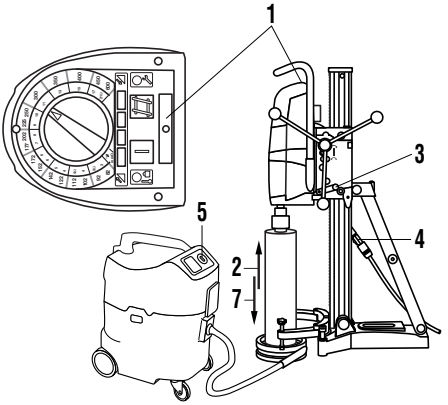

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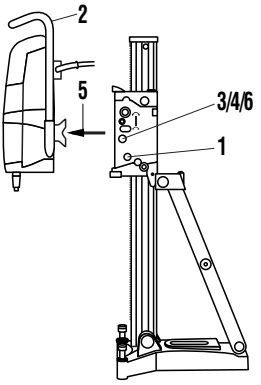

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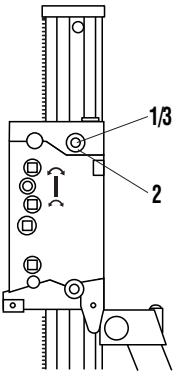

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ORIGINAL OPERATING INSTRUCTIONS
DD 350/DD 500 diamond core drilling system

It is essential that the operating instructions are read and understand before the machine is operated for the first time.

Always keep these operating instructions together with the machine.

Ensure that the operating instructions are with the machine when it is given to other persons.

Operating controls, parts and indicators
Machine (machine and drill stand) 1

Machine
① Service indicator
② Iron Boost button
③ OFF switch
④ Drilling performance indicator (Power Controls)
⑤ ON switch
⑥ Temperature monitor/ground fault
⑦ Gear selector
⑧ Water flow regulator
⑨ Chuck
⑩ Supply cord with GFCI (DD 350)/supply cord (DD 500)
⑪ Carrying grips (2x)
⑫ Water hose connector
⑬ Type plate
⑭ Interface

Drill stand
⑮ Column
⑯ Carriage cap
⑰ Strut
⑱ Base plate
⑲ Clamping spindle (not included)
⑳ Clamping nut (not included)
㉑ Anchor (not included)
㉒ Leveling screws (3x)
㉓ Hole center indicator
㉔ Carriage
㉕ Eccentric (machine) locking bolt
㉖ Direct drive
㉗ Reduction gear
㉘ Carriage locking mechanism
㉙ Hand wheel
㉚ Carrying grip (2x)
㉛ Supply cord guide
㉜ Type plate
㉝ Leveling indicators (2x)
㉞ End stop
㉟ Wheel assembly mounting point

ACCESSORIES
Vacuum base plate
㊱ Pressure gauge
㊲ Vacuum release valve
㊳ Vacuum seal
㊴ Vacuum hose connector
㊵ Wheel assembly mounting point

Water flow indicator
㊶ Water flow indicator

Water collector system
㊷ Water collector holder
㊸ Water collector
㊹ Seal
㊺ Seal
㊻ Water outlet cap

Contents | **Page**

1. General information

1.1 Safety notices and their meaning

-DANGER-
Draws attention to imminent danger that will lead to serious bodily injury or fatality.

-WARNING-
Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.

-CAUTION-
Draws attention to a potentially dangerous situation that could lead to slight personal injury or damage to the equipment or other property.

-NOTE-
Draws attention to an instruction or other useful information.

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1.2 Explanation of warning signs and other symbols

Prohibition signs

Transport by crane is not permissible.

Warning signs

General warning

Warning: electricity

Warning: hot surface

Obligation signs

Wear eye protection

Wear a safety helmet

Wear ear protection

Wear safety gloves

Wear safety boots

Other symbols

Read the operating instructions before use.

Recycle waste material.

A Amps

V Volts

W Watts

Hz Hertz

/min Revolutions per minute

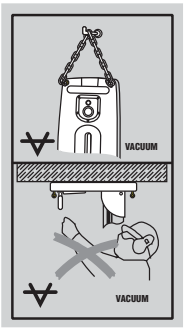
rpm Revolutions per minute

~ Alternating current

n_0 Nominal speed under no load

∅ Diameter

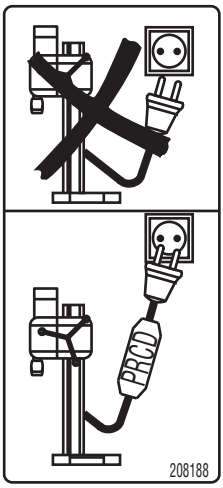
On the vacuum base plate



Top:
An additional means of securing the drill stand must be employed when used for horizontal drilling with vacuum attachment.

Bottom:
Use of the vacuum base plate to secure the drill stand for overhead drilling is not permissible.

On the machine



Operate only when connected to a functioning GFCI.
(Only for DD 350, 220–240 V)

1.3 Other information

1 These numbers refer to the corresponding illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while studying the operating instructions.
In these operating instructions, the designation “the machine” refers to the DD 350 or DD 500 core drilling machine.

Location of identification data on the machine
The type designation and serial number can be found on the rating plate on the machine. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type:	DD 350	DD-HD 30
Serial no.:		
Type:	DD 500	DD-HD 30
Serial no.:		

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2. General safety rules

WARNING! Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury. SAVE THESE INSTRUCTIONS.

2.1 Work area

a) **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
c) **Keep bystanders, children and visitors away while operating a power tool.** Distractions can cause you to lose control.

2.2 Electrical safety

a) **Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adaptor plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tools should electrically malfunction or break down, grounding provides a low-resistance path to carry electricity away from the user.
b) **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.
c) **Don't expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
d) **Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electric shock.
e) **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electric shock.

2.3 Personal safety

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
b) **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
c) **Avoid accidental starting. Be sure switch is off before plugging in.** Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents.
d) **Remove adjusting keys or wrenches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
e) **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the power tool in unexpected situations.
f) **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat or hearing protection must be used for appropriate conditions.

2.4 Power tool use and care

a) **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
b) **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
c) **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
d) **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of starting the tool accidentally.
e) **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
f) **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools with sharp cutting edges are less likely to bind and are easier to control.
g) **Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
h) **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another tool.

2.5 Service

a) **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
b) **When servicing a tool, use only identical replacement parts. Follow instructions in the**

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Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.

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3. Specific safety rules and symbols

3.1 Proper organization of the work area

a) **Approval must be obtained from the site engineer or architect prior to beginning drilling work.** Drilling work on buildings and other structures may influence the statics of the structure, especially when steel reinforcing bars or load-bearing components are cut through.
b) **Ensure that the workplace is well ventilated.** Exposure to dust at a poorly ventilated workplace may result in damage to the health.
c) **When drilling through walls, cover the area behind the wall, as material or the core may fall out on the other side of the wall. When drilling through ceilings, secure (cover) the area below as drilled material or the core may drop out and fall down.**
d) **Wear respiratory protection if the work causes dust.**
e) **It is recommended that rubber gloves and non-skid shoes are worn when working outdoors.**
f) **Do not allow other persons to touch the machine or the extension cord.**
g) **Always lead the supply cord, extension cord and water hose away from the tool or machine to the rear to prevent a tripping hazard while working.**
h) **Keep the supply cord, extension cord, suction hose and vacuum hose away from rotating parts.**
i) **WARNING: Before beginning drilling, check that there are no live electric cables located in the base material.**
j) **Concealed electric cables or gas and water pipes present a serious hazard if damaged while you are working. Accordingly, check the area in which you are working beforehand (e.g. using a metal detector).** External metal parts of the machine may become live, for example, when an electric cable is damaged accidentally.
k) **Do not work from a ladder.**
l) **WARNING: Some dust created by grinding, sanding, cutting and drilling contains chemicals known to cause cancer, birth defects or other reproductive harm, or serious and permanent respiratory or other injury.** Some examples of these chemicals are: lead from lead-based paints, crystalline silica from bricks, concrete and other masonry products and natural stone, arsenic and chromium from chemically-treated lumber. Your risk from these exposures varies, depending on how often you do this type of work. **To reduce exposure to these chemicals, the operator and bystanders should work in a well-ventilated area using approved safety equipment such as respiratory protection appropriate for the type of dust generated and designed to filter out microscopic particles. Direct dust away from face and body. Avoid prolonged contact with dust. Wear protective clothing and wash exposed areas with soap and water.** Allowing dust to get into your mouth, eyes, or to remain on your skin may promote absorption of harmful chemicals.
m) **WARNING: The tool may be operated only with a correctly-functioning RCD residual current device / GFCI ground fault circuit interrupter. Check the electric supply each time before use to ensure that an RCD residual current device / GFCI ground fault circuit interrupter is present and in working order.**

3.2 Operation and storage

a) Check that all core bits are in good condition before use. Do not use deformed or damaged core bits.
b) **The machine is not intended for use by children, by debilitated persons or those who have received no instruction or training.**
c) **Children must be instructed not to play with the machine.**
d) **Use the right tool or machine for the job. Do not use the tool or machine for purposes for which it was not intended. Use it only as directed and when in faultless condition.**
e) **Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
f) **Use only the genuine Hilti accessories or ancillary equipment listed in the operating instructions.** Use of accessories or ancillary equipment not listed in the operating instructions may present a risk of personal injury.
g) **Keep the hand wheel dry, clean and free from oil and grease.**

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h) **Never leave the machine unattended.**
j) **Store machines in a secure place when not in use. When not in use, machines must be stored in a dry, high place or locked away out of reach of children.**
j) **Always disconnect the supply cord from the electric supply when the machine is not in use (e.g. during breaks between working), before making adjustments, before carrying out care and maintenance and before changing core bits.** This safety precaution prevents the machine starting unintentionally.
k) **Never operate the machine without the GFCI supplied with it. Test the GFCI each time before use.**
l) **Check the machine and its accessories for any damage. Safety devices and any slightly damaged parts must be checked carefully to ensure that they function faultlessly and as intended. Check that moving parts function correctly without sticking and that no parts are damaged. All parts must be fitted correctly and fulfill all conditions necessary for correct operation of the machine. Damaged safety devices and other parts must be repaired or replaced properly at an authorized service center unless otherwise indicated in the operating instructions.**
m) **Avoid skin contact with drilling slurry.**
n) **Wear a protective mask during work that generates dust, e.g. dry drilling. Connect a dust removal system. Drilling in materials hazardous to the health (e.g. asbestos) is not permissible.**

3.3 Mechanical

a) **Follow the instructions concerning care and maintenance.**
b) **Check that the core bits used are compatible with the chuck system and that they are secured in the chuck correctly.**
c) **Make sure that the machine is correctly and securely mounted on the drill stand.**
d) **Do not touch rotating parts.**
e) **Check that all the clamping screws are correctly tightened.**
f) **Make sure that the cover with built-in end stop is always fitted to the drill stand. The safetyrelevant end-stop function becomes inoperative if this component is not fitted.**

3.4 Electrical

a) **Check the condition of the machine and its accessories. Do not operate the machine and its accessories if damage is found, if the machine is incomplete or if its controls cannot be operated faultlessly.**
b) **Do not touch the supply cord or extension cord if it is damaged while working. Disconnect the supply cord plug from the power outlet.**
c) **Damaged or faulty switches must be replaced at a Hilti service center. Do not use the machine if it cannot be switched on and off correctly.**
d) **Have the machine repaired only by a trained electrical specialist (Hilti service center) using genuine Hilti spare parts. Failure to observe this point may result in risk of accident to the user.**
e) **Check the machine's supply cord at regular intervals and have it replaced by a qualified specialist if found to be damaged. Check extension cords at regular intervals and replace them if found to be damaged.**
f) **When working outdoors, use only extension cords that are approved and correspondingly marked for this application.**
g) **Avoid using extension cords with multiple power outlets and the simultaneous use of several electric tools or machines connected to one extension cord.**

3.5 Thermal

Wear protective gloves when changing core bits. The core bit may become hot during use.

3.6 Requirements to be met by users

a) **The machine is intended for professional use.**
b) **The machine may be operated, serviced and repaired only by authorized, trained personnel. This personnel must be informed of any special hazards that may be encountered.**
c) **Improve the blood circulation in your fingers by relaxing your hands and exercising your fingers during breaks between working.**

3.7 Personal protective equipment

The user and any other persons in the vicinity must wear ANSI Z87.1-approved eye protection, a hard hat, ear protection, protective gloves and safety footwear while the machine is in use.

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4. Functional description

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4.1 Use of the equipment as intended

The DD 350 or DD 500 with the DD HD-30 drill stand, form drilling rigs designed for wet core drilling in mineral materials using diamond core bits (hand-held use is not permissible).
The machine must always be mounted on the drill stand when in use and the drill stand secured adequately to the base material by means of an anchor or vacuum base plate.
Manipulation or modification of the machine, drill stand or accessories is not permissible. To avoid the risk of injury, use only genuine Hilti accessories and insert tools.
Observe the information printed in the operating instructions concerning operation, care and maintenance.
Observe the safety precautions and operating instructions for the accessories used.
Do not strike the base plate with a hammer or other heavy object when making adjustments to it.
The machine, drill stand, accessories and insert tools may present hazards when used incorrectly by untrained personnel or not as directed.
The machine may be operated only when connected to an adequately rated electric supply equipped with an earth/ground conductor.

DD 350

Equipment	Core bit diameters	Drilling direction
System with water collector	2″–10″ (50–250 mm)	All directions
System without water collector	2″–20″ (50–500 mm)	All directions

DD 500

Equipment	Core bit diameters	Drilling direction
System with water collector	3¼″–10″ (82–250 mm)	All directions
System without water collector	3¼″–24″ (82–600 mm)	All directions

The machines are designed and built in accordance with IP55 and are thus resistant to sprayed water. This allows drilling to be carried out in all directions without use of a wet-type industrial vacuum cleaner.

The machines may be operated only when connected to an adequate cooling water supply (at least 0.5 l/min. at max. 96°F (30°C) water temperature).

If the drill stand column is extended to a length of 6.56 ft (2 m) or longer, an additional means of support, e.g. the clamping spindle (item no. 305940) must be used.

Horizontal drilling in conjunction with the vacuum base plate (accessory) is permissible only when an additional means of securing the drill stand is employed.

Drilling into materials hazardous to the health (e.g. asbestos) is not permissible.

4.2 Items supplied

DD 350 or DD 500 diamond drilling machine
Operating instructions

4.3 Technical data

Machine	DD 350	DD 500
Rated voltage*	240 V ~	480 V 3 ~
Rated current input*	15 A	8 A
Rated frequency	50/60 Hz	50/60 Hz
Rated speed under no load	270–670 /min	270–580 /min
Chuck	BL (or other types)	
Max. permissible water supply pressure	6 bar (at higher pressures, a pressure reduction valve must be fitted at the site water supply connection)	
Min. required water flow rate	0.5 l/min (at max. 96°F (30°C) water temperature)	1 l/min (at max. 96°F (30°C) water temperature)
Dimensions (LxWxH)	23.9″ × 7.6″ × 8.5″ (608 × 192 × 216 mm)	
Nominal weight (machine)	32 lb (14.4 kg)	37 lb (16.6 kg)
Nominal weight (drill stand)	40.4 lb (18.3 kg)	40.4 lb (18.3 kg)

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Max. operating weight	154 lb (70 kg) (machine, drill stand, 20˝ (500 mm) dia. core bit)	183 lb (83 kg) (machine, drill stand, 24˝ (600 mm) dia. core bit)
Drilling range (max.)	82–350 (500)	102–500 (600)
Drilling depth	max. 20˝ (500) mm without extension	
Protection class as per EN/IEC 61029	Protection class I (earthed/grounded)	
Resistant to dust and sprayed water (IP code)	IP55	

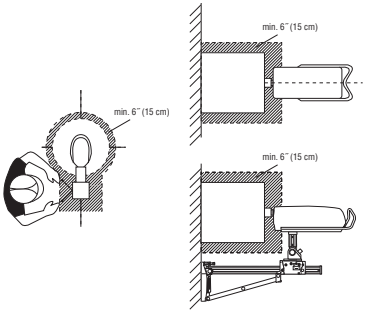
* The machine is available in several versions with different voltage ratings. Please refer to the type plate for the voltage rating of your machine.

5. Assembly

-CAUTION-
The mains voltage must correspond with the information printed on the type plate.
Ensure that the machine is disconnected from the electric supply.

5.1 Preparations

-CAUTION-
The machine, the diamond core bit and the drill stand are heavy. There is a risk of pinching parts of the body. Wear a hard hat, protective gloves and safety footwear.



The hatched area in the drawing above indicates the danger zone around the machine. Parts of the body must be kept at least 6˝ (15 cm) away while the machine is in operation.

5.1.1 Setting up the drill stand 2

-NOTE-
If the drill stand has been folded up to facilitate transport, proceed as follows:
1. Release the screws at the top end of the strut and at the column pivot.
2. Pivot the column into the vertical position (as far as it will go).
3. Tighten the screw at the top end of the strut and at the column pivot securely.

-CAUTION-
The end cap must be fitted on the end of the column. It serves as a protector and as the end stop.

5.1.2 Fitting the hand wheel 3

-NOTE-
The hand wheel can be fitted on the left or right side of the carriage, on either of the two axles. The upper axle drives the carriage directly while the lower axle drives the carriage by way of reduction gearing.
1. Fit the hand wheel to one of the two axles on either the left or right side of the carriage.
2. Secure the hand wheel with the screw provided.

5.1.3 Fastening the drill stand with an anchor 4

-WARNING-
Use an anchor suitable for the material on which you are working and observe the anchor manufacturer's instructions.
-NOTE-
Hilti M16 metal expansion anchors are usually suitable for fastening diamond core drilling equipment to uncracked concrete. Under certain conditions it may be necessary to use an alternative fastening method. Please contact Hilti Technical Service if you have any questions about secure fastening.
1. Set the anchor, of a type suitable for the material on which you are working, ideally at a distance of 330 mm (13") from the center of the point where the hole is to be drilled.
2. Screw the clamping spindle (accessory) into the anchor.
3. Position the drill stand over the spindle and bring it into alignment with the aid of the hole center indicator. When the spacer is used (accessory), the hole center indicator cannot be used to align the drill stand.
4. Screw the clamping nut onto the spindle but do not tighten it.
5. Level the base plate by way of the 3 leveling screws. The two level indicators on the carriage serve as a leveling aid.
6. Use a 27 mm AF open-end wrench to tighten the clamping nut on the spindle. Do not strike it with a hammer or other heavy object as this may cause damage to the base plate. The strut can be pivoted out of the way to facilitate access. This part, however, must be refitted and fastened securely to the column before operating the machine.
7. Check that the drill stand is fastened securely.

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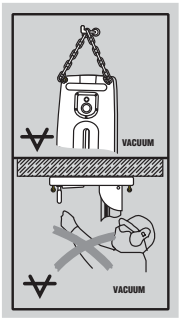
5.1.4 Fastening the drill stand with the vacuum base plate (accessory) 5

-CAUTION-
Check the surface on which the vacuum base plate is to be mounted. An uneven, rough surface can significantly reduce the effectiveness of the vacuum fastening system. Coatings or laminated surfaces may be pulled away while working with the vacuum base plate.

-CAUTION-
Suitable for use only with core bits of up to 12˝ (300 mm) diameter and without use of a spacer.

-NOTE-
The hand grip on the vacuum base plate is equipped with a vacuum valve which can be used to release the vacuum. Check the condition of the seal on the vacuum base plate at regular intervals and replace it if found to be worn or damaged.



Overhead drilling with the drill stand fastened by vacuum is not permissible.

1. Turn the four leveling screws back until they project approx. 5 mm beneath the vacuum base plate.
2. Connect the hose between the vacuum base plate and the vacuum pump.
3. Position the drill stand on the vacuum base plate.
4. Fit and tighten the screw and washer provided.
5. Mark the center point of the hole to be drilled.
6. Draw a line approximately 31½˝ (800 mm) in length from the center mark toward the approx. position at which the drill stand is to be secured.
7. Make a mark on the 31½˝ (800 mm) line at a distance of 6½″ (165 mm) from the hole center mark.
8. Bring the marks on the vacuum base plate into alignment with the 31½˝ (800 mm) line.
9. Position the center of the front edge of the vacuum base plate on the line at the 6½″ (165 mm) mark.

-CAUTION- Make yourself familiar with information contained in the operating instructions for the vacuum pump and follow these instructions before using the vacuum pump.

10. Switch on the vacuum pump and press the vacuum release valve.
11. Once the drill stand has been positioned correctly, remove your finger from the vacuum release valve and press the base plate against the work surface.

-CAUTION- Before beginning drilling and during operation, it must be ensured that the pressure gauge pointer remains within the green area.

12. Use the four leveling screws to level the vacuum base plate. The 2 built-in level indicators on the carriage serve as leveling aids.
    -WARNING- Do not attempt to level the anchor base plate on the vacuum base plate as this is not possible.
13. An additional means of securing the drill stand must be employed when drilling horizontally (e.g. a chain attached to an anchor, ...)
14. Check that the drill stand is fastened securely.

5.1.5 Adjusting the angle of the drill stand (adjustable to max. 45°) 6

-CAUTION-
Take care to avoid pinching your fingers at the pivot. Wear protective gloves.

1. Release the screw at the pivot at the lower end of the column and at the strut at the top end.
2. Bring the column into the desired position. The angle scale on the rear serves as an adjustment aid.
3. Retighten the two screws securely.

5.1.6 Using the column extension (accessory) 7

1. Remove the end cap (with built-in end stop) from the top end of the column and refit it to the end of the column extension.
2. Fit the cylindrical section of the column extension into the end of the column on the drill stand.
3. Secure the column extension by tightening the eccentric locking bolt.
4. A depth gauge (accessory) may be fitted on the column as an additional end stop.
5. After detaching the column extension, the end cap must be refitted to the drill stand in order to retain the safety-relevant function of the end stop.

5.1.7 Fitting the spacer (accessory) 8

-NOTE-
The distance between the drilling axis and the drill stand must be increased by fitting the spacer when diamond core bits with a diameter greater than 12˝ (300 mm) are to be used. The hole center indicator cannot be used in conjunction with the spacer. A maximum of 2 spacers may be fitted, one behind the other. These instructions presume that the machine is not already fitted.

1. Lock the carriage in position on the column (activate the carriage locking mechanism).
2. Pull out the machine locking bolt.
3. Fit the spacer onto the carriage.
4. Push the locking bolt into the carriage as far as it will go.
5. Tighten the locking bolt securely.

5.1.8 Mounting the machine on the drill stand 9

-CAUTION-
Ensure that the machine is disconnected from the electric supply.

1. Lock the carriage in position on the column (activate the carriage locking mechanism).
2. Pull out the machine locking bolt.
3. Fit the machine onto the carriage or spacer.

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4. Push the locking bolt into the carriage or spacer as far as it will go.
5. Tighten the locking bolt securely.
6. Clip the supply cord into the supply cord guide on the carriage cover.
7. Check that the machine is mounted securely.

5.1.9 Connecting the water supply

-NOTE-
Before operating the machine, check that the 3-way valve is in the wet or dry drilling position.
1. Connect the water supply hose to the machine.
2. Connect the hose to the water supply (hose coupling).

-NOTE-
A water flow indicator (accessory) can be connected between the water supply hose and the hose connector on the machine.

-CAUTION-
Check the hoses for damage at regular intervals and make sure that the maximum permissible water supply pressure of 6 bar is not exceeded.

5.1.10 Fitting the water collector system (accessory) 10

-NOTE-
Use of the water collector system permits water to be drained away from the core bit thus avoiding soiling the surrounding area. We recommend use of the water collector system with core bits of up to 10˝ (250 mm). diameter. Best results are achieved in conjunction with a wet-type vacuum cleaner. The drill stand must be set up at 90° to the working surface.
The water collector seal must be of a size suitable for the core bit diameter used.
1. Release the screw at the column pivot (at the front lower end of the drill stand column).
2. Slide the water collector holder into place behind the screw from below.
3. Tighten the screw securely.
4. Fit the water collector between the two moveable arms of the water collector holder.
5. Secure the water collector by way of the two screws on the water collector holder.
6. Connect a wet-type industrial vacuum cleaner to the water collector or fit a length of hose through which the water can drain away.

5.1.11 Adjusting the depth gauge (accessory)

1. Turn the hand wheel until the core bit contacts the material in which the hole is to be drilled.
2. Set the desired drilling depth by adjusting the distance between the carriage and the depth gauge.
3. Secure the depth gauge by tightening the clamping screw.

5.1.12 Fitting a diamond core bit (machine with Hilti BL chuck) 11

-CAUTION-
The core bit may become hot during use or during sharpening. Wear protective gloves when changing the core bit.

-DANGER-
Do not use damaged core bits. Check the core bits for chipping, cracks, or heavy wear each time before use. Do not use damaged tools. Fragments of the workpiece or a broken core bit may be ejected and cause injury beyond the immediate area of operation.

-NOTE-
Diamond core bits must be replaced when the cutting performance and/or rate of drilling progress drops significantly. This generally is the case when the segments reach a height of less than 2 mm.

-CAUTION-
Fitting and positioning the core bit incorrectly can lead to hazardous situations as parts can break and fly off. **Check that the core bit is seated correctly.**
1. Lock the carriage in position on the column (activate the carriage locking mechanism) and check that the drill stand is fastened securely.
2. Open the chuck by turning it in the direction of the “open” symbol (open brackets).
3. Push the connection end of the diamond core bit into the chuck on the machine from below until it engages with the gear teeth.
4. Close the chuck by turning it in the direction of the “closed” symbol (closed brackets).
5. Check that the diamond core bit it is held securely (check by hand for play and try to pull it away from the chuck).

5.1.13 Selecting the drilling speed 12

Select the switch position according to the core bit diameter to be used.
Core bit speed (r.p.m.) can be adjusted while the machine is in operation.

5.2 Transport and storage

-CAUTION-
Transport the machine, drill stand and diamond core bit as separate units. Use the wheel assembly (accessory) to facilitate transport. Open the water flow regulator before storing the machine. Especially at temperatures below freezing, take care to ensure that no water remains in the machine (see also section 6.10).

5.3 Use of extension cords

Use only extension cords of a type approved for the application and with conductors of adequate cross section.

Mains voltage	**Conductor cross section** mm² / **AWG**				
Conductor cross section	1.5 / **15**	2.0 / **14**	2.5 / **13**	3.5 / **12**	4.0 / **11**
240 V	20 m / **66 ft**	–	40 m / **131 ft**	50 m / **164 ft**	60 m / **197 ft**

Do not use extension cords with 1.25 mm² or 16 AWG conductor cross sections.

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5.3.2 Recommended minimum conductor cross section and max. cable lengths for the DD 500

Mains voltage	Conductor cross section mm² / AWG		
Conductor cross section	1.5 / **15**	2.5 / **13**	
480 V	30 m / **98 ft**	75 m / **246 ft**	

5.3.1 Recommended minimum conductor cross section and max. cable lengths for the DD 350

5.4. Use of a generator or transformer

5.4.1 DD 350

This machine may be powered by a generator or transformer which meets the following specifications:
– AC voltage, output power at least 7,000 VA
– The operating voltage must be within 5 % and –10 % of the rated voltage at all times.
– Frequency range 50–60 Hz; max. 65 Hz
– Automatic voltage regulation with starting boost
Never operate other machines or appliances from the generator or transformer at the same time. Switching other machines or appliances on and off may cause undervoltage and/or overvoltage peaks, resulting in damage to the machine.

5.4.2 DD 500

This machine may be powered by a generator or transformer which fulfills the following conditions:
– AC voltage, output power at least 10,000 VA
– The operating voltage must be within 5 % and –10 % of the rated voltage at all times.
– Frequency range 50–60 Hz; max. 65 Hz
– Automatic voltage regulation with starting boost
Never operate other machines or appliances from the generator or transformer at the same time. Switching other machines or appliances on and off may cause undervoltage and/or overvoltage peaks, resulting in damage to the machine.

6. Operation

-DANGER-
Have the earth/ground conductor in the electric supply and the earth/ground connection to the machine checked at regular intervals in order to ensure that they are functioning correctly.

-CAUTION-
The machine and the core drilling operation emit noise. Wear ear protection.

-CAUTION-
The core drilling operation may cause hazardous fragments to fly off. Wear eye protection and a hard hat.

6.1 Switching on the GFCI ground fault interrupter (DD 350)

-CAUTION-
1. Plug the machine supply cord into an electric socket with earth connection.
2. Press the “ON” button on the GFCI ground fault interrupter. (The indicator must light)
3. Press the “TEST” button on the GFCI ground fault interrupter. (The indicator must go out).

-DANGER-
If the indicator continues to light, further operation of the machine ist not permissible. Have the machine repaired by a qualified specialist using genuine Hilti spare parts.

4. Press the “ON” button on the GFCI ground fault interrupter again. (The indicator must light)

6.2 Core bit diameters and corresponding gears

DD 350		
Gear	**Core bit diameter**	**Speed under no load**
1	52–62 mm / 2″–2 3/8″	667
2	72–92 mm / 2 3/4″–3 1/2″	667
3	102–112 mm / 4″–4 1/2″	667
4	122 mm / 4 3/4″	619
5	127–142 mm / 5″–5 1/2″	571
6	152–162 mm / 6″–6 3/8″	524
7	172–182 mm / 6 3/4″–7″	405
8	202 mm / 8″	357
9	225–250 mm / 9″–10″	310
10	300–500 mm / 12″–20″	286

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DD 500		
Gear	**Core bit diameter**	**Speed under no load**
1	82–92 mm / 3¼″ – 3½″	571
2	102–112 mm / 4″ – 4½″	571
3	122–132 mm / 4¾″ – 5¼″	571
4	142–172 mm / 5½″–6¾″	571
5	182–202 mm / 7″–8″	510
6	225–250 mm / 9″–10″	429
7	300 mm / 12″	367
8	350 mm / 14″	327
9	400 mm / 16″	286
10	450–600 mm / 18″–24″	265

6.3 Operating the machine without the water collector system and wet-type vacuum cleaner

-CAUTION-
The water flows away in uncontrolled fashion.

6.3.1 Switching on the drilling system 13

1. Open the water flow regulator slowly until the desired volume of water is flowing.
2. Check that the core bit is not in contact with the base material.
3. Press the ON switch on the machine.
4. Release the carriage lock while holding the handwheel securely.
5. Turn the hand wheel until the core bit comes into contact with the material in which the hole is being drilled.
6. Apply only light pressure until the core bit has become centered and then gradually increase the pressure.
7. Regulate the pressure applied to the core bit by observing the drilling performance indicator (optimum drilling performance is achieved when the green lamps in the display light).

6.3.2 Using drilling-starting mode

-NOTE-
Strong vibration may occur when starting the drilling process. In this case, use drilling-starting mode.
1. Press the ON switch on the machine.
2. Press the ON switch a second time. The core bit then rotates very slowly.
3. Press the core bit firmly against the surface where the hole is to be drilled.
4. After a short time in drilling-starting mode (approx. 5 sec.), press the ON switch again. The core bit then rotates at the normal running speed. Continue drilling in the usual way.

6.3.3 Procedure when drilling through a rebar

-NOTE-
Slower drilling progress can be an indication of rebar contact.
The following procedure is recommended when drilling through a rebar:
1. Press the Iron Boost button.
2. Press the Iron Boost button again when the rate of drilling progress increases, indicating that the core bit is through the rebar and drilling only into concrete. The Iron Boost is then switched off.

-NOTE-
Use the Iron Boost for drilling in heavily reinforced concrete. Switch the Iron Boost off each time after drilling through rebars in order to avoid reducing core bit life unnecessarily.

6.4 Operating the drilling machine with the water collector system (accessory)

-NOTE-
Use of the water collector system while drilling at an angle is not possible. The water is allowed to flow away through a length of hose.

-CAUTION-
Check that the core bit and water collector are centered in relation to each other. The core bit fills with water during overhead drilling.

6.4.1 Switching on 14

1. Open the water flow regulator slowly until the desired volume of water is flowing.
2. Check that the core bit is not in contact with the base material.
3. Press the ON switch on the machine.
4. Release the carriage lock while holding the handwheel securely.
5. Turn the hand wheel until the core bit comes into contact with the material in which the hole is being drilled.
6. Apply only light pressure until the core bit has become centered and then gradually increase the pressure.
7. Regulate the pressure applied to the core bit by observing the drilling performance indicator (Power Controls). Optimum drilling performance is achieved when the green lamps in the display light.

6.5 Operating the drilling machine with the water collector system and wet-type vacuum cleaner (accessory)

-NOTE-
Use of the water collector system while drilling at an angle is not possible.
The water is allowed to flow away through a length of hose.

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The wet-type vacuum cleaner must be switched on manually before beginning drilling and switched off manually at the end of the drilling operation.

-CAUTION-
Check that the core bit and water collector are centered in relation to each other.
The core bit fills with water during overhead drilling.

6.5.1 Switching on 15

1. Switch on the wet-type vacuum cleaner. Do not use automatic mode.
2. Ensure that the water supply is connected and ready for use.
3. Open the water flow regulator.
4. Check that the core bit is not in contact with the base material.
5. Press the ON switch on the machine.
6. Release the carriage lock while holding the handwheel securely.
7. Turn the hand wheel until the core bit comes into contact with the material in which the hole is being drilled.
8. Apply only light pressure until the core bit has become centered and then gradually increase the pressure.
9. Regulate the pressure applied to the core bit by observing the drilling performance indicator (optimum drilling performance is achieved when the green lamps in the display light).

6.6 Dry drilling

-NOTE-
The 3-way valve must be in the dry drilling position.
To collect the dust, use a suitable dust removal system consisting of the following listed accessories: water collector ring and seal of the appropriate diameter, hose connector and industrial vacuum cleaner. The dust removal process must be assisted by applying a flow of compressed air through the core bit (flow rate at least 30 l/s).
Wear a breathing mask if the work creates dust.

1. Remove the water outlet cap.
2. Start the water flow (required for motor cooling).
3. Allow the cooling water to flow away through the drainage hose.
4. Switch on the vacuum cleaner and compressed air.
5. Check that the core bit is not in contact with the base material.
6. Press the ON switch on the machine.
7. Release the carriage lock while holding the handwheel securely.
8. Turn the hand wheel until the core bit comes into contact with the material in which the hole is being drilled.
9. Apply only light pressure until the core bit has become centered and then gradually increase the pressure.
10. Regulate the pressure applied to the core bit by observing the drilling performance indicator (Power Controls). Optimum drilling performance is achieved when the green lamps in the display light).

6.7 Switching off 16

1. Switch off the machine.
2. Withdraw the diamond core bit from the hole.

-CAUTION-
Exercise caution when drilling overhead: The core bit fills with water.

3. Engage the carriage lock.
4. Close the water flow regulator.
5. Switch off the vacuum cleaner, if used.
6. After drilling overhead, the water must be drained from the core bit. To do this, remove the water outlet cap, attach a drainage hose (accessory) to the water ontlet and then turn the 3-way valve to the middle position. Keep the water away from the machine.
7. To ensure that the drill stand remains in balance, lower the core bit until in contact with the working surface or fold out the hole center indicator (this is not effective if using the vacuum base plate).
8. Unplug the supply cord or switch off the GFCI.
9. Remove the core.

-CAUTION-
The core may be very heavy.

6.8 Procedure in the event of the core bit sticking

The slip clutch will be activated if the core bit sticks. The machine must then be switched off by the operator. To release the core bit, proceed as follows:

Using an open-end wrench to release the core bit

1. Disconnect the supply cord plug from the power outlet.
2. Grip the core bit close to the connection end with a suitable open-end wrench and rotate the core bit to release it.
3. Plug the supply cord back into the power outlet.
4. Continue the drilling operation.

Using the spider wheel to release the core bit

1. Disconnect the supply cord plug from the power outlet.
2. Release the core bit by rotating it with the spider wheel.
3. Plug the supply cord back into the power outlet.
4. Continue the drilling operation.

6.9 Removing the machine from the drill stand 17

-CAUTION-
Ensure that the machine is disconnected from the mains supply.

1. Lock the carriage in position on the column (activate the carriage locking mechanism).
2. Hold the machine securely with one hand on the carrying grip. (**-CAUTION-** The machine may fall if not held securely.)
3. Release the machine eccentric locking bolt with the other hand.
4. Pull out the eccentric locking bolt.
5. Remove the machine from the carriage.
6. Push the eccentric locking bolt back into the carriage as far as it will go.

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6.10 Storing and break times in sub-zero temperatures

-CAUTION-
If break times are longer than one hour when working at temperatures below 32°F (0°C) or if the machine is to be stored at such temperatures, the water in the system must be blown out with compressed air.
1. Disconnect the water supply hose from the machine.
2. Open the water flow regulator.
3. Set the 3-way valve to the wet drilling position.
4. Use compressed air (max. pressure 3 bar) to blow all water out of the system.

6.11 Disposing of drilling slurry

see Section 10 “Disposal”

7. Maintenance

-CAUTION-
Disconnect the supply cord plug from the socket.

-CAUTION-
Keep the machine, especially its grip surfaces, clean and free from oil and grease. Do not use cleaning agents which contain silicone.

Care of insert tools and metal parts
Remove any dirt adhering to parts and rub the core bits and the chuck with an oily cloth from time to time to protect their surfaces from corrosion.

7.1 Care of the machines

The outer casing of the machine is made from impact-resistant plastic. Clean the outside of the machine at regular intervals with a cloth. Do not use water spray or steam pressure equipment for cleaning. This may negatively affect the electrical safety of the machine.

7.2 Maintenance

Check all external parts of the machine for damage at regular intervals and check that all controls operate faultlessly. Do not operate the machine if parts are damaged or when the controls do not function faultlessly. If necessary, the machine should be repaired at a Hilti repair center.
Repairs to the electrical section of the machine may be carried out only by trained electrical specialists.

7.3 Indicator lamps

	Status	Recommendation
Service indicator	Lights constantly	Return the machine to Hilti for servicing.
	Blinks	Fault in the machine (see "Troubleshooting")
	Continues to blink	Return the machine to Hilti urgently for servicing (failure to observe this recommendation may reduce entitlement to the services provided by optional Hilti Full Service.)
Overheating Overvoltage/ undervoltage	Lights constantly	Check the water flow.
	Blinks	Check the electric supply (see "Troubleshooting").

7.4 Adjusting the play between the column and the carriage 13

The play between the column and the carriage can be adjusted by way of 4 eccentrically-mounted rollers.

The 4 rollers shown in the illustration can be adjusted. First remove the machine from the drill stand and run the carriage up to the top of the column by turning the hand wheel. The 4 rollers can then be adjusted as follows:
1. Use a 5 mm AF hex. socket wrench to unscrew the locking screw slightly (do not remove the screw).
2. Use a 19 mm AF open-end wrench to turn the eccentric axle, thus pushing the roller slightly toward the column.
3. Tighten the locking screw.
4. Test: When adjusted correctly, the carriage alone will remain in position (not slide down). With the machine mounted on it, the carriage should slide down under its own weight.

7.5 Checking the equipment after care and maintenance

All functions must be checked after care and maintenance.

8. Accessories

Water flow indicator	305939
DD-HD30 drill stand	305534
Depth gauge	305535
Water collector holder	305536
Column extension, 3.28 ft (1 m)	305537
Column extension, 0.98 ft (0.3 m)	285296

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Vacuum base plate	305538
Vacuum pump	332158
Spacer	305539
Wheel assembly	305541
Clamping spindle	305940
Clamping spindle M16	220947
Clamping nut	251834
Anchor HDI 5/8"	336428
Water collector 8–87 (with seal, also suitable for dry drilling)	232204
Water collector 25–152 (with seal, also suitable for dry drilling)	232221
Water collector 92–250 (with seal, also suitable for dry drilling)	232243
Chuck, BS/BR	305904
Chuck, BL	282987
Chuck, Pixie	305905
Adaptor BU → BL	305909
Adaptor BL → BU	282989
Adaptor BS → BL	284891
Adaptor BL → BS/BR	305910
Adaptor BL → Pixie	283982
Extension DD-BS-ET 200 S (steel)	202898
Extension DD-BS-ET 500 S (steel)	202899
Extension DD-BS-ET 300 S (aluminium)	202900
Extension DD-BS-ET 500 S (aluminium)	202901
Core bit extension BL 12˝ (300 mm)	305903
Cross-column adaptor	305540
Drainage hose	202992
Connector (for dry drilling)	46938
Vacuum cleaner (for dry drilling, e.g. Hilti VCU 40, VCD 50)	000000

9. Troubleshooting

Fault	Possible cause	Remedy
The machine doesn't start	Fault in the electric supply	Plug in another electric appliance and check whether it works. Check the plug connections, electric supply, GFCI (DD 350) and fuse in the electric supply.
	Supply cord or plug defective.	Have it checked by a trained electrical specialist and replaced if necessary.
	Switch defective.	Have the machine repaired at a Hilti service center.
The machine doesn't start and the temperature/overvoltage/undervoltage warning lamp lights.	Machine has overheated.	Switch the machine off (press the OFF switch in the middle) and then switch on again. Check the water supply. Allow the machine to cool down before restarting.
The machine doesn't start and the service indicator blinks.	The machine is faulty or a safety cut-out has been activated.	Switch the machine off (press the OFF switch in the middle) and then switch on again. Have the machine serviced by Hilti if the fault persists.
The machine runs and the service indicator lights.	Service interval reached.	Return the machine to Hilti for servicing.
The machine runs and the service indicator blinks.	Service interval exceeded.	Servicing urgently required. Return the machine to Hilti.

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The motor runs, core bit doesn't rotate.	Gearing defective.	Have the machine repaired at a Hilti service center.
Rate of drilling progress decreases.	Diamond core bit segments polished.	Sharpen the core bit on a sharpening plate while water is flowing.
	Diamond core bit segments polished.	The wrong core bit specification has been used. Seek advice from Hilti.
	Water pressure / water flow rate too high.	Use the regulator to reduce the water flow rate (a minimum flow rate of 0.5 l/min. must be maintained).
	The core is stuck in the core bit.	Remove the core.
	Maximum drilling depth reached.	Remove the core and use a core bit extension.
	The diamond core bit is defective.	Check the diamond core bit for damage and replace it if necessary.
	Gearing defective.	Have the machine repaired at a Hilti service center.
	The clutch is releasing prematurely or slipping.	Have the machine repaired at a Hilti service center.
The motor cuts out.	The core bit has been jammed (stalled) for too long.	Free the core bit. Switch the motor off and then on again.
	Electric power failure.	Check the plug connections, electric supply, GFCI (DD 350) and fuse in the electric supply.
	Electronics defective.	Have the machine repaired at a Hilti service center.
Water leakage at the water swivel or gear housing.	Shaft seal defective.	Have the machine repaired at a Hilti service center.
	Water pressure is too high.	Reduce the water pressure.
The diamond core bit cannot be fitted into the chuck.	Chuck or connection end dirty or damaged.	Clean the connection end/chuck or replace if necessary.
Water leakage at the chuck during operation.	Core bit not screwed securely into the chuck.	Tighten it securely.
	Chuck or connection end dirty.	Clean the chuck or connection end.
	Chuck seal or core bit connection end defective.	Check the seal and replace it if necessary.
Excessive play in the drilling system.	Screws at the top end of the strut and/or at the column pivot are loose.	Tighten the screws.
	Core bit not screwed securely into the chuck.	Tighten it securely.
	The machine mounting/locking mechanism is loose.	Tighten the machine mounting/locking mechanism.
	Leveling screws or clamping spindle not tightened.	Tighten the leveling screws or clamping spindle.
	Excessive play at the carriage.	Adjust the play at the carriage guide rollers.
	Excessive play at the chuck.	Check that the chuck runs true and replace it if necessary.
	Connection end defective.	Check the connection end and replace it if necessary.
	Chuck not fitted correctly.	Fit the chuck as far as it will go and tighten the hex. socket screw to a torque of 35 Nm.
	Not securely fastened to the base material.	Check the fastening and adjustment of the leveling screws.

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10. Disposal

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Recycle waste material
Most of the materials from which Hilti tools or machines are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back your old power tools for recycling. Please ask your Hilti customer service department or Hilti representative for further information.

Disposal of drilling slurry
With regard to environmental aspects, allowing drilling slurry to flow directly into rivers, lakes or the sewerage system without suitable pretreatment is problematical. Ask the local authorities for information about applicable regulations.

We recommend the following pretreatment
Collect the drilling slurry (e.g. use a wet-type industrial vacuum cleaner).
Allow the slurry to settle and dispose of the solid material at a construction waste disposal site (the addition of a flocculent may accelerate the settling process).
Water from the drilling slurry (alkaline, ph value >7) should be neutralized by adding an acidic neutralizing agent or large quantity of water before it is allowed to flow into the sewerage system.

11. Manufacturer's warranty – tools

Hilti warrants that the tool supplied is free of defects in material and workmanship. This warranty is valid so long as the tool is operated and handled correctly, cleaned and serviced properly and in accordance with the Hilti Operating Instructions, and the technical system is maintained. This means that only original Hilti consumables, components and spare parts may be used in the tool.

This warranty provides the free-of-charge repair or replacement of defective parts only over the entire lifespan of the tool. Parts requiring repair or replacement as a result of normal wear and tear are not covered by this warranty.

Additional claims are excluded, unless stringent national rules prohibit such exclusion. In particular, Hilti is not obligated for direct, indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the tool for any purpose. Implied warranties of merchantability or fitness for a particular purpose are specifically excluded.

For repair or replacement, send tool or related parts immediately upon discovery of the defect to the address of the local Hilti marketing organization provided.

This constitutes Hilti's entire obligation with regard to warranty and supersedes all prior or contemporaneous comments and oral or written agreements concerning warranties.

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Hilti Corporation
LI-9494 Schaan
Tel.: +423 / 234 21 11
Fax: +423 / 234 29 65
www.hilti.com

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